

image scientists

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# #IAMGOLDENEYE ARCHIVE SCANNER



# THE WORLD'S MOST VERSATILE FILM SCANNER

Developed with archive and restoration in mind, Golden Eye has matured into the leading film scanner in this field. With a high quality LED light source and its truly unique Universal Optics, the Golden Eye scanner heralds a new era of quality film scanning, previously unavailable at this price point. The Golden Eye is a high-speed, high-resolution film scanner for motion picture film. High performance and flexibility make the scanner the perfect system for preservation, restoration and archival work.

Real-time scanning at 2K resolution and up to 11 fps in 4K, Golden Eye is the most cost-efficient, quality film scanners available today. Immediate primary grading can be carried out on the system before scanning, using the colour management controls and operator panel.

Scan size can be SD, HD, 2K, 4K or custom sizes. A capstan drive with continuous movement of the film and sprocket less optical registration, results in minimum wear on fragile film and film perforations. The scanner was designed to handle film in any physical condition. Heavily-shrunk, warped or film with damaged perforations is scanned without damaging

## UNIVERSAL OPTICS

With the unique Universal Optics, film from 8mm to 70mm, including Pathé and every format in between can be scanned without change of optics.

The Universal Optics system is controlled through the Golden Eye software. This adjusts focus and zoom, moving the optics into the correct position when a new format is selected.

Changing formats is as simple as changing the skid plate and then selecting the new format in the software. All optical changes are automated.

# BOOST PERFORMANCE WITH A DUAL CAMERA SOLUTION

The camera is at the heart of any scanner, so we gave it two.

To optimise performance, two cameras are used. The main camera captures the film's active area using a 4K tri-linear camera, enabling the sampling of all colours at full resolution, whilst an additional technical camera is used for optical frame registration and control of the film's transport speed and stability.

As an option, the additional camera can also be used for decoding key code and scanning the optical sound track. Optical registration of perforations helps to stabilise the framing of the film.

## AUDIO CAPTURE AT ANY SPEED

### OPTICAL AUDIO

The input from the technical camera is used for decoding optical sound, stereo or mono, variable density or variable area, positive or negative. Golden Eye uses image processing for decoding, which allows for automatic adjustment for different densities inherent in old film bases and for automatic dust correction.

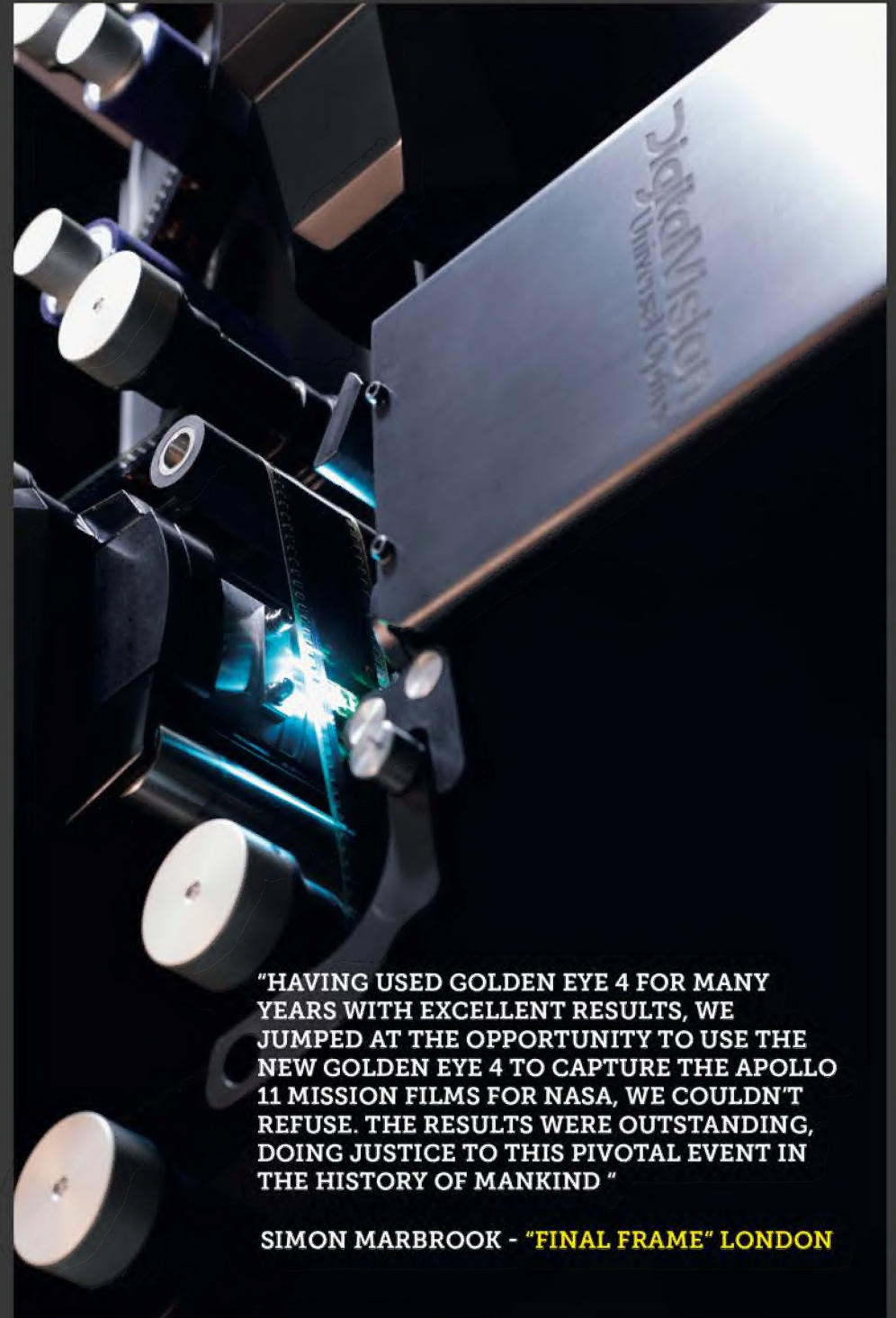
The sound track is automatically detected and the decoding algorithm follows the sound tracks throughout the scanning process. This means for example, that shrunken-film is scanned without problem. The decoding can be done at any scanning speed, up to real-time, which allows for slow-scanning of old and sensitive film.

As the decoding is carried out at the same time as the image recording with adjustable sound spacing, there are no synchronisation problems. The decoded sound is scanned into a .WAV file and saved together with the scanned image files.

### MAGNETIC AUDIO

Golden Eye provides composite audio track acquisition, known commonly as COMMAG. Whilst 16mm is often available on telecines and scanners, Golden Eye, in line with the commitment to service ALL formats found in film archives, extends this to 8mm and uniquely 35mm AND 70mm 6 track films. Also, because of the large amount of 'SEPMAG' tapes and the expense and difficulty of acquiring 'sound followers', 'SEPMAG' heads will soon be available to ensure that all film related magnetic audio types are catered for.

Also uniquely, Golden Eye can acquire these magnetic tracks in non-realtime. This enables the scanner to be set up for image quality and speed, independently of the the audio track's original recording speed (within certain limits). Similar to the optical track output, COMMAG outputs to a .WAV file for easy editing, processing and synchronization.



**"HAVING USED GOLDEN EYE 4 FOR MANY YEARS WITH EXCELLENT RESULTS, WE JUMPED AT THE OPPORTUNITY TO USE THE NEW GOLDEN EYE 4 TO CAPTURE THE APOLLO 11 MISSION FILMS FOR NASA, WE COULDN'T REFUSE. THE RESULTS WERE OUTSTANDING, DOING JUSTICE TO THIS PIVOTAL EVENT IN THE HISTORY OF MANKIND "**

**SIMON MARBROOK - "FINAL FRAME" LONDON**

# GOLDEN EYE AND LOKI... THE POSSIBILITIES ARE ENDLESS

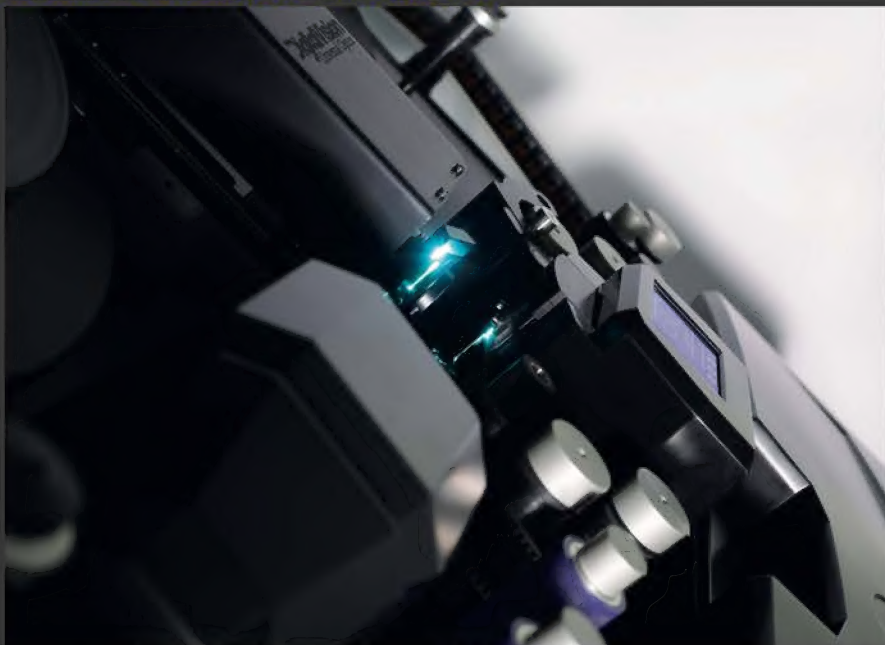
Golden Eye, working alongside Digital Vision's Loki automated image processing engine make film restoration and image enhancement tools available to correct and restore scanned data.

Loki provides access to DVO, Digital Vision's suite of image processing algorithms. This industry standard toolset supports archival requirements such as format conversion, noise reduction, comprehensive film restoration and much more.

With over 25 advanced tools for film restoration, image enhancement and format conversion, the possibilities are limitless. Loki now unleashes this unique and unparalleled toolset into a fully configurable and automated workflow to support archival work. Ask sales@digitalvision.world for more information

## LOKI

### AUTOMATED CONVERSION AND RESTORATION



# TECHNICAL SPECIFICATIONS

## HARDWARE

### Scanner Sensor

- 4K sensor with variable resolution
- Pixel size 10.56 x 10.56µm
- True RGB: All colours sampled at full Film Formats
- Standard SMPTE and SMPTE + gates (8mm, 16mm, 35mm, 65mm, 70mm)
- Pathe gates (9.5mm, 17.5mm, 22mm)
- Custom skid plates

### Universal Optics

- Single lens, motor driven, multi axis, optical system for precision image sizing, position and focus.
- Scan 8mm to 70mm without changing optics

### Main Camera & Technical Camera

- Main Camera: 4K Tri-linear
- Three channels Red, Green, Blue
- Technical Camera: 4K sensor Illumination
- RGB - high power LED
- HDR mode
- Hybrid integrating cylinder with compressed air Film length
- Max reel size - 2000 feet. Normal / reverse wind
- Variable winding speed up to 4m/s (200fps) with degraded image

### Film Types

- Colour print and negative, B/W print and negative, intermediate, reversal Local control
- Touch screen with basic control functions, stop, rewind and untense film

### Magnetic Audio (Option)

- COMMAG audio heads for 8mm, 16mm, 35mm, 70mm and SEPMAG.
- Real-time and non-realtime recording • Stereo, mono and multi-track

### Optical Audio

- COMOPT for 35mm and 16mm
- Variable density, variable area
- Stereo, mono, positive and negative
- Auto-tracking

### Colour Management

- Automatic Dmin and Dmax calibration
- Automatic exposure control
- Film base correction
- Colour balance and levels control in low-lights, mid tones and highlights

### Technical Monitoring

- Interactive RGB Waveform, Vectorscope and Histogram (RGB)

### Technical Camera Processing

- Sound decoding for positive and negative sound track
- Decoding of keycode
- Registration of pinholes for image stabilisation
- Splice detection

### Output/Supported File Formats

- DPX - SMPTE-268 2003 (10, 12, 16 bit log or linear)
- Mono DPX (10, 12, 16 bit)
- Quicktime, multiple Tiff (optional compression)
- MPEG, AVI, WMV and more video SDI/HD for preview (not suitable for recording)
- Apple ProRes
- Image overlays (TC, KK or customised)

### Image Acquisition

- Free format or fixed scan ratios (4:3) (16:9)
- User defined window
- Image rotation, flip and mirroring
- Image cache with preview - Automatic scan from EDL and XML clip list

### Mechanical Dimensions

- Foot print at 45o angle - 100cm x 72cm x 85cm (operating position)
- 100cm x 80cm x 40cm (service position - flat)
- Requires 30cm space around scanner to allow for air flow.
- Portable device: ~ 90 kg

### Power and Ancillary Requirements

- AC Power Supply: 110 - 240V / 50-60Hz
- Power Consumption: 500W (excluding workstation)
- Environmental Requirements: approx 20oC and normal air humidity for office work (40 to 50%)
- Compressed air supply required 50 liter/min @ 3 bar

**Installation & training, extended service and support available.**

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